

App. No. 10/601,135  
Amdt. dated February 22, 2005  
Reply to Office Action of October 21, 2004

### **Amendments to the Claims**

Please replace the subtitle at page 20, line 1, with the following text:

**CLAIMS** What is claimed is:

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### **Listing of Claims:**

Claims 1-10 (cancelled).

Claim 11 (currently amended): A method for controlling a treatment unit ~~(16)~~ for treating at least one feed gas, comprising the following steps:

- (i) providing a pressure swing adsorption (PSA) treatment unit;
- (ii) supplying a product gas from the treatment unit which ~~that~~ is operating on a parameterized cycle; and
- (iii) utilizing a control unit to control the treatment unit ~~(30)~~.

Claim 12 (currently amended). The method according to Claim 11, wherein said ~~method comprises of a~~ treatment unit ~~(16)~~ ~~that~~ consists of N adsorption units.

Claim 13 (previously presented): The method according to Claim 12, wherein said adsorption unit consists of at least one selected from the following: R1, R2, R3, R4, R5, and R6 units.

Claim 14 (currently amended): The method according to Claim 11, wherein said control unit ~~(30)~~ modifies at least one parameter of the feed gas, and/or the product gas.

Claim 15 (currently amended): The method according to Claim ~~[[11]]~~ 14, wherein said control unit ~~(30)~~ receives a pre-established signal comprising a change in the process parameter.

Claim 16 (currently amended): The method according to Claim 15, wherein said control unit ~~(30)~~ processes said signal to determine the parameters of an exceptional operating cycle.

Appl. No. 10/601,135  
Amdt. dated February 22, 2005  
Reply to Office Action of October 21, 2004

Claim 17 (currently amended): The method according to Claim ~~[[15]]~~ 16, wherein said signal is subject to a predicted change of the operating cycle~~[[s predicted change]]~~.

Claim 18 (currently amended): The method according to Claim 15, wherein intensity of said signal is subject to ~~the~~ a change in the composition of the feed gas.

Claim 19 (currently amended): The method according to Claim 11, wherein said control unit ~~(30)~~ comprises a constant reference signal.

Claim 20 (currently amended): The method according to Claim 19, wherein said reference signal is modified to form ~~[[the]]~~ a pre-established signal when there is a predicted change.

Claim 21 (currently amended): The method according to Claim 15, wherein said pre-established signal is subject to the operation of at least one upstream unit of the treatment unit ~~(46)~~.

Claim 22 (previously presented): The method according to Claim 15, wherein said pre-established signal comprises partially of the feed gas to be treated.

Claim 23 (previously presented): The method according to Claim 16, wherein said exceptional cycle consists of a predetermined duration.

Claim 24 (currently amended): The method according to Claim 16, wherein the duration of said exceptional cycle is transmitted to the control unit ~~(30)~~ via an end signal.

Claim 25 (currently amended): The method according to Claim 24, wherein said end signal is pre-established subject to ~~the~~ a predicted change in the composition of the feed gas.

Claim 26 (currently amended): The method according to Claim 11, wherein said parametrized operating cycle of the treatment unit ~~(46)~~ comprises the following:

- (i) a phase of adsorption;

Appl. No. 10/601,135  
Amcl. dated February 22, 2005  
Reply to Office Action of October 21, 2004

- (ii) a phase of regeneration; and
- (iii) repressurization.

Claim 27 (previously presented): The method according to Claim 26, wherein said phase of adsorption occurs at a high pressure of the cycle.

Claim 28 (previously presented): The method according to Claim 26, wherein said phase of regeneration comprises a step of depressurization down to a low pressure of the cycle.

Claim 29 (previously presented): The method according to Claim 26, wherein said repressurization occurs at the high pressure of the cycle.

Claim 30 (currently amended): The method according to Claim 15, wherein said parameters are selected from either the duration of the phase time ( $T\phi^{exc}$ ) and/or the duration of at least one step from the a regeneration phase.

Claim 31 (currently amended): The method according to Claim 11, wherein the method comprises the following steps:

- i) sending a signal regularly to the control unit (30) that represents the flow rate and/or the density of the feed gas;
- ii) determining the parameters of the an exceptional operating cycle of the treatment unit (46); and
- iii) adjusting parameters on the basis of the signal representing the flow rate and/or the density of said feed gas.

Claim 32 (currently amended): The method according to Claim 11, wherein the method comprises the following steps:

- i) sending a signal regularly to the control unit (30) that represents the flow rate and/or the composition of the product gas;
- ii) determining the parameters of the exceptional operating cycle of the treatment unit (46); and
- iii) adjusting these parameters on the basis of the signal representing the flow rate and/or the composition of said product gas.

Appl. No. 10/601,135  
Amct. dated February 22, 2005  
Reply to Office Action of October 21, 2004

Claim 33 (currently amended): A method for controlling a treatment unit (46) for treating at least one feed gas, comprising the following steps:

- (i) providing a pressure swing adsorption (PSA) treatment unit;
- (ii) supplying a product gas from the treatment unit which ~~that~~ is operating on a parameterized cycle; and
- (iii) utilizing a control unit to control the treatment unit (30);

wherein said method comprises of a treatment unit (46) that consists of N adsorption units selected from the following group: R1, R2, R3, R4, R5, and R6 unit, and whereby said control unit (30) modifies at least one parameter of the feed gas, and/or the product gas.

Claim 34 (currently amended): A method for controlling a treatment unit (46) for treating at least one feed gas, comprising the following steps:

- (i) providing a pressure swing adsorption (PSA) treatment unit;
- (ii) supplying a product gas from the treatment unit which ~~that~~ is operating on a parameterized cycle; and
- (iii) utilizing a control unit to control the treatment unit (30);

wherein said ~~method comprises of~~ a treatment unit (46) that consists of N adsorption units selected from the following group: R1, R2, R3, R4, R5, and R6 units, and whereby said control unit (30) modifies at least one parameter of the feed gas, and/or the product gas and receives a pre-established signal comprising a change in the process parameter, and whereby said control unit (30) processes said signal to determine the parameters of an exceptional operating cycle, and wherein said signal is subject to a predicted change in the operating cycle[~~'s predicted change~~].

Claim 35 (currently amended): The method according to Claim 11, wherein the treatment unit (46) produces hydrogen.

Claim 36 (currently amended): The method according to Claim 35, wherein the treatment unit (46) produces substantially pure hydrogen.

Claims 37-38 (cancelled)